NEVADA NATIONAL NNSS SECURITY SITE

ONE VOICE

Summer 2016

A Publication for the Nevada Enterprise (NvE) Complex

Centerra-Nevada Class Graduation

Congratulations to these TRF-100 security police officers and their trainers.

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NSTec Welcomes New Hires

New employees learn about the NNSS at reception and Site tours.

See page 5.

Groundwater Open House

Locals get a surprising education about the NNSS.

See page 12.

Recent NNSA Visit Examines Proposed Mercury Infrastructure

By Tracy Bower

In the 1960s, Mercury was a bustling community, complete with 1960s architecture facilities to house, feed and care for the thousands of workers who worked on the nation's nuclear weapons program. Today, the mission is quite different.

Mercury still serves as the hub for employees at the Nevada National Security Site (NNSS). Though jobs have changed significantly, much of the 1960s architecture and infrastructure remains there today, just as it did then. This fall, employees and visitors will see the first phase of a modernization plan designed to remove aging facilities and replace them with modern buildings designed to meet the Site's needs over the next 30 years—but in a much smaller footprint.

The goal is to create the infrastructure that will serve the NNSS and its employees and remove those facilities that no longer serve a purpose.

"We just celebrated our 65th anniversary, and much of our infrastructure and facilities are that age as well," said Raffi Papazian, vice president for Program Integration. "We want to eliminate those facilities that are anchors and expand those programs that aid in the nuclear deterrent."

Papazian discussed the plans at the three-day discussion about the Site's infrastructure needs. More than 50 officials from the Department of Energy's National Nuclear Security Administration (NNSA), its Nevada Field Office (NFO) and the NNSS gathered in North Las Vegas to discuss plans about new buildings replacing old facilities no longer in use, and modernizing roads, water and power lines, as well as critical communications infrastructure.

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Desert Tortoises Thrive at NNSS

By Tracy Bower

"Scurry," the star tortoise that resides at the Nevada National Security Site (NNSS), is doing just fine. Scurry was one of 60 tortoises released at the Site about three and a half years ago. The tortoises were moved to the NNSS as part of the effort to study the impact of relocating young tortoises.

Scientists have seen normal mortality rates among the group since the tortoises were relocated. "That tells us that translocation is a viable option for tortoises," said Senior Scientist Derek Hall, one of the biologists participating in a robust conservation program aimed at protecting the threatened desert tortoises.

Hall and his colleagues are working with a team from the San Diego Zoo to further study the tortoise population. While normal mortality rates have been seen, Hall noticed something that piqued his curiosity. "Mortality rates among female tortoises seem to be higher." He suspects that natural predators in the wild have an easier time tracking female tortoises compared to males and he's working with other biologists to determine just how that occurs.

The program is also reducing the financial burden to the NNSS. Normally, the NNSS would be required to pay a habitat mitigation fee of $847 per acre for any work at the NNSS that could potentially disturb tortoise habitats. The U.S. Fish and Wildlife Service agreed to forego the mitigation fee in favor of the relocation program and the studies that are underway. Under the agreement, the NNSS has accumulated $500,000 in credit for the tortoise study. "It reduces the out of pocket expenses to the organization and we learn more about the tortoises, so it benefits both sides," Hall said.

Photo: Tjeanette Perry, San Diego Zoo

NvE Executive's Corner

By Martin Glasser, General Manager, Centerra-Nevada

Have You Become Lax in Your Security Awareness?

It seems like every day there is a new breaking story about a terrorist assault, an active shooter event or some other violent event that draws national attention, resulting in the loss of innocent life. Unfortunately, once we realize it occurred outside our area of interest, we move on with our daily business. Sometimes, we read or listen to the news as the media describes the event, but generally, many of us simply acknowledge the event occurred and "carry on" with our lives. "It didn't happen here or it didn't involve my family so I'm moving on."

Have we become so familiar with these events that it has become a part of modern life? We simply accept it? If so, have we become complacent, and as a result, have we become less vigilant?

Let me give you some examples: the Paris attack that occurred on the evening of November 13, 2015, resulting in the deaths of 130 people and wounding hundreds more; the Brussels Airport attack on the morning of March 22, 2016, killing 32 innocent people, and again, resulting in hundreds of people injured; the June 12 shooting deaths of 49 innocent people at a club in Orlando, Fla., with many more wounded; the June 28 attack at the Istanbul, Ataturk Airport, killing 36 and injuring 147; and the incident in Nice, France, resulting in 84 innocent lives lost and more than 300 people injured. Once we realized that these attacks occurred (and continue to occur) in Europe and some faraway place in the United States, did we really stop to think this could occur here in Nevada or in Las Vegas… in Santa Barbara, Livermore, Los Alamos, Sandia or elsewhere? Or did we just say, "Glad it didn't happen here" and move on?

I raise these questions because I'm asking that all of us refocus on security. Help your security professionals do the best job possible and ensure we keep our workplace safe and secure. I don't want to panic the workforce, but the incident that occurred in San Bernardino, Calif., on Dec. 2, 2015, could have just as easily occurred in our workplaces. As the terrorists' tactics change and evolve, we have to adapt and become even more vigilant because these incidents didn't just happen. In each of the above incidents, there were signs and signals, but they were missed, and in some cases, people didn't want to get involved by reporting the anomalies they observed. If they had, maybe the outcome would have been different. The sad part is we'll never know, and even sadder is the senseless loss of innocent lives.

Please help your security team help you and, if you "See Something, Say Something."

Marty

Centerra TRF-100 Class Graduates

By Roxie Frehner

Centerra-Nevada is extremely proud to announce the June graduation of its Tactical Response Force-100 (TRF-100), the largest graduating class (with 21 students) since 2008.

Marty Glasser, Centerra-Nevada general manager, thanked the entire training and support staff for their contribution to a successful class, and presented the lead instructor, Colin Care, with a Centerra-Nevada Coin of Excellence for his outstanding contributions and leadership to the class. Glasser also recognized Security Police Officer (SPO) III Drew Albers with the Top Gun Award for achieving a score of 394 out of a possible 400.

In her keynote speech, National Nuclear Security Administration Nevada Field Office Deputy Manager Carol Sohn congratulated the graduating class and spoke regarding the key roles that security has played throughout the years at the Nevada National Security Site and the importance of Centerra-Nevada's SPOs.

This class comprised more than a collective 170 years of military experience. They served in the U.S. Army, Marine Corps and Air Force. Their military occupations include infantry, military police, security forces, Special Forces, explosive ordnance disposal, mechanized mechanic and amphibious assault. In addition to their military service, several have also served with local law enforcement and security contractors. These graduates completed more than 400 hours of extensive training in weapons, tactics and other specialized subjects.

Congratulations to these outstanding SPOs and trainers for completing the TRF course.

Photo: Todd Breitigan

Front row, l-r: Eric Leslie, Justin Ocampo, Gerick Thunstrom, John Feathers, Robert Kegley and Ronnie Henslee. Second row: Dennis Hernandez, Walter Spangler, Matthew Tokunaga, Josue Dombrosky, Jennifer Glover and Anthony Kelley. Third row: Jared Hale, David Howe, Stephen Hanks, Lt. Benjamin Shoemaker, Drew Albers, Nicholas Hardin, Teon Thomas and Tremayne Jackson Jr. Not pictured: Ronald Morse. All but Shoemaker, and Kegley and Morse (training specialists), are SPOs.

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NNSA National Nuclear Security Administration

STEM Students, Military Vets Wanted at Job Fair

By Lory Jones

Recently, Denise Alvarado from the North Las Vegas Facility and Matt Griffin and Colin Leong from Livermore Operations reached out to recruit military veterans at a RecruitMilitary job fair in the Oakland, Calif., area.

Representing the Nevada National Security Site (NNSS), they were among almost 40 exhibitors talking to vets to see if they were a good fit for the company and the Nevada National Security Site's mission.

Alvarado, a senior human resources specialist, said they collected 10 resumes at the fair. "We have always recruited young people and members of our military for jobs at our facilities, such as the Remote Sensing Laboratory at Nellis in Las Vegas. We're particularly looking for STEM (Science, Technology, Engineering, Math) students who would be eager to work for us. We've found that some of the military earned their degrees in a STEM field. So far at this fair, we've talked to jobseekers who were very excited about working at the Livermore office. Livermore is very active in recruiting," said Alvarado.

The NNSS was among corporations, universities, federal agencies, medical companies and the California Army National Guard, to name a few, who welcomed vets to talk to them and review their resumes.

According to its website, RecuritMilitary is a non-profit, veteran-owned and -operated company that helps employers connect with America's veterans. RecruitMilitary says they are the nation's leading veteran hiring solutions company, offering a diverse array of branding, engagement and retention services.

Photo: Matt Griffin

Colin Leong (left) and Denise Alvarado talk to a job fair attendee.

From the Editor's Desk

This edition will be the last issue of *OneVoice*.

The decision comes in the wake of the new Nevada National Security Site (NNSS) website, www.nnss.gov, going live in September. The NNSS website features the same great news about our mission, projects and people, only in a much timelier manner.

Launched in October 2012, *OneVoice* began as a compilation of NSTec's employee newsletter, *Spotlight*, and the Nevada Enterprise (NvE) newsletter, *SiteLines*. We at *OneVoice* have reveled in its glory days, winning writing and graphic design awards from the Nevada Press Association. We have also proudly produced a nostalgic keepsake: a souvenir edition of the 65th Anniversary of the NNSS.

But all good things must pass in the name of technology, where most of the news is read on iPads, smartphones and computers. Saving paper and preserving the environment are good reasons to "stop the presses" on hard copies and deliver electronically. However, the best perk of online news is that you get it faster, with the same attention to quality and detail.

We look forward to a more exciting way in delivering the NvE's news to you.

Lory Jones,
Editor

News Briefs

NNSS Receives High Marks in State Inspection

The Nevada Department of Environmental Protection (NDEP) conducts an annual inspection of Nevada National Security Site facilities, and this year's inspection was a resounding success. The Compliance Evaluation Inspection is required under the federal Resource Conservation and Recovery Act. The process is rigorous—NDEP inspects every container of waste, permitted unit and every document recorded.

This year's inspection was such a success that NDEP did not note a single violation or an area where they could provide recommendations for improvement.

Employees from three directorates assisted with the inspection, including Nuclear Operations, Environmental & Waste Management, and Mission Assurance & Safety. Environmental & Waste Management Director Teri Browdy praised the employees involved in the inspection for their knowledge and preparation.

"When the employees were questioned about the procedures, operations and permitting processes, it was apparent to our stakeholders that the integrated team's knowledge, commitment to safety and conduct of operations laid the foundation for a very sound and compliant program. The preparation work completed before the inspection commenced was apparent to the NDEP inspectors, and they were very complimentary of the team," said Browdy.

NSTec's Holt Welcomed to LVGEA Board

NSTec President Jim Holt has been named to the Board of Directors of the Las Vegas Global Economic Alliance (LVGEA), the leading economic development organization in southern Nevada.

The LVGEA said it chose Holt because the organization wants to diversify its board the way it is striving to diversify industry in Southern Nevada. Holt and Michael Cunningham, executive vice president and regional president at Bank of America, are the LVGEA's newest board members.

"I look forward to working with the LVGEA during my tenure and plan to hand the Board of Director position to the next Nevada National Security Site management and operations contractor. Being part of the Las Vegas economic development is an important part of the responsibilities for companies here in Las Vegas," said Holt.

A private organization, the LVGEA works as a clearinghouse for economic development is Southern Nevada and works directly with the Governor's Office of Economic Development. According to its website, lvgea.org, the LVGEA is a 501(c)6 membership organization dedicated to developing the economies of Las Vegas, Clark County, Henderson, North Las Vegas, Boulder City and Mesquite through regional cooperation, global trade and global connectivity.

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When HFC's Safety is a Priority, Everybody Wins

By Desiree Hanache

"One day at a time, one task at a time" is one of the many safety slogans posted around the Bistro and Mercury cafeterias. These slogans and other catchy engagers were created by various employees of the Housing, Feeding and Custodial (HFC) staff. Their commitment to safety, as well as to each other, has shown true strength. Both groups are leading the divisional charts: Housing and Custodial scored so far with 787 incidence-free days, and Feeding with 590. The HFC department attributes their teams' success by putting safety first in everything they do.

Feeding Supervisor Dan Mykovich explained some of the safety related actions the HFC organization does, such as playing safety Hangman or a kind of Family Feud at their safety meetings. These games focus on safety topics and engage the entire group.

The HFC organization has also incorporated various safety videos, guest speakers and demonstrations to keep the meetings interesting. The demonstrations are conducted by staff members, since they are the ones who complete their jobs daily and are the experts. These demonstrations enable all employees to receive real-world advice and instruction, giving them insight into the responsibilities that their co-workers take on as part of their jobs. Not only do these activities give the workers an understanding of their co-workers' responsibilities, this type of engagement allows them to truly be "their brother's keeper."

Photo: Lory Jones

Dan Mykovich with a board that tracks Feeding's "Incident Free Days."

Employees ensure that they're happy and possess the tools necessary to complete their jobs as efficiently as possible. One way to achieve this is by creating a wish list and a "You spoke, we listened" board. Team members add whatever they might need or want, and management fulfills these requests to the best of their abilities.

HFC Manager Mike Madrid noted, "Everything the HFC organization does is geared toward engaging employees in safety habits. They are dedicated to becoming more aware of not only their jobs, but also the jobs of their co-workers. This has been a team effort with many leaders."

Guss Receives 2nd Qtr. Project Excellence Award

By Lory Jones

For the second quarter of the 2016 fiscal year, Paul Guss, senior principal scientist in Global Security's Strategic Initiatives division, accepted NSTec's Project Excellence Award. Paul was recognized for his "notable project performance customer satisfaction demonstrated in the successful execution of the Global Security End to End Warhead Monitoring Campaign project."

Photo: Lory Jones

Awarding Paul Guss (right) is NSTec Vice President for Operations Roy Bridges Jr.

The project demonstrated new techniques and approaches for monitoring a nuclear weapon throughout the various stages of its existence, from maintenance to storage to dismantlement. The project explored various approaches that relied on possible tagging systems, innate features of the weapons themselves, and perimeter monitoring technologies. One challenge the project met was that the technologies had to determine if an object was a nuclear weapon without releasing any secret information about the weapon itself. The demonstration showcased these new technologies and approaches to policy makers, arms control experts and inspectors.

"I can honestly say it was the entire End to End and NSTec team that pulled together to make the project excel," said Guss.

Congratulations, Paul!

NNSS Took the "Active" Challenge, Placed Second

By Lory Jones

Many employees within the National Nuclear Security Administration's enterprise partook in the 2016 Active for Life (AFL) Multi-Lab Challenge. AFL, an exercise incentive program from the American Cancer Society, encourages employees to be more active on a regular basis by setting individual goals and forming teams for motivation and support.

The results are in . . . and the Nevada National Security Site (NNSS) placed second (Lawrence Livermore National Laboratory placed first).

With a total of 159 participants, the NNSS scored 542,342 exercise minutes.

Within the NNSS, National Security Technologies' teams placed first and second, and Navarro placed third:

- First – "NSTec" (Joe Huerta's team)
- Second – "Spring N2 Action, Again" (Silas Dominguez's team)
- Third – "The Guns of Navarro" (Milinka Watson-Garrett's team)

Huerta and Kelly Hinojos, also of NSTec, received the Best Team Captain Award.

Congratulations to these top three teams and to all the teams that participated this year.

NSTec Welcomes New Employees with Reception, Tour

By Kirsten Kellogg

Starting a new job is always exciting but can also be a little overwhelming, especially when trying to learn about the new organization and meet new co-workers and bosses. To help ease some of that "new hire anxiety," National Security Technologies (NSTec) has recently implemented two programs—a new hire reception and a new hire tour.

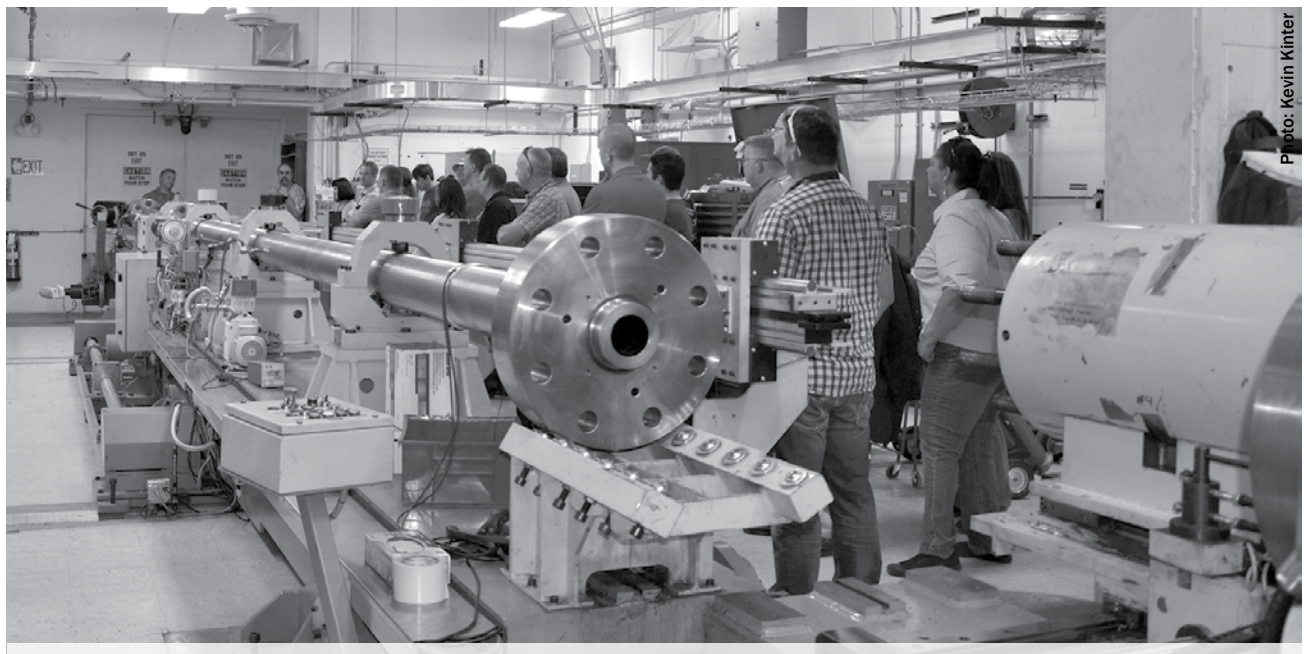

Photo: Kevin Kinter

New employees got an up-close look at the two-stage gas gun at the JASPER facility.

The reception, held at the National Atomic Testing Museum, gives new employees the chance to mingle outside of work with their direct managers, NSTec senior management and other new hires. A tour of the museum also gives new employees the opportunity to learn the history of the Nevada National Security Site (NNSS).

"I thought it was nice to be able to branch out and meet other managers and the president of the company," said Ryan Owens, a maintenance specialist with Fleet, Fuel and Equipment Services. "Everyone was a pleasure to meet and talk to. Being able to network this early into a company really makes things nice."

In addition to the reception, a tour of the NNSS is now offered to employees. Many of NSTec's employees do not work at the Site or in Nevada, and may never get the chance to see it. This tour introduces new hires to current mission activities and highlights some of the Site's famous history.

"The tour was beneficial, especially since I had never previously visited (I'm from the Remote Sensing Laboratory (RSL)–Andrews). It provided new perspectives that would have been very difficult, if not impossible, to get without physically going to the NNSS," said Scott Suchyta, a senior scientist with Andrews Emergency Response.

Photo: Nancy Holt

Sedan Crater was a highlight of the new employee tour.

Jonathan Harrison, a senior infrastructure analyst at RSL-Nellis, felt the same. "I really enjoyed the tour, and it gave me a much better perspective and appreciation for the work that goes on at the Site. The mission that we support is an important and critical mission of readiness. It has given me a sense of the big picture mission that I didn't fully understand when first hiring on, and it has really humbled me that I am a part of such an important job in support of the teams and the Site."

Current tour stops include the Joint Actinide Shock Physics Experimental Research (JASPER) Facility, Icecap, the T-1 training area, U1a, Sedan Crater, the Area 5 Radioactive Waste Management Complex, the Nonproliferation Test and Evaluation Complex and Frenchman Flat.

News Briefs

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NNSS' Malone Nominated for Prestigious Edgerton Award

The Nevada National Security Site (NNSS)'s Distinguished Engineer Robert Malone has been recently nominated for SPIE's Harold E. Edgerton Award—a prestigious honor for Malone, who has led an illustrious career dedicated to advancing high-speed optical techniques, diagnostic instrumentation and applications.

SPIE (formerly the Society of Photo-Optical Instrumentation Engineers, now renamed the International Society for Optical Engineering) is an international society advancing an interdisciplinary approach to the science and application of light.

Malone has designed key diagnostics that are highly regarded and used regularly at the NNSS, Los Alamos National Laboratory facilities, Lawrence Livermore National Laboratory's National Ignition Facility and other areas in the country. Also, Malone's history goes back to EG&G, where he began his career with the company "Doc" Edgerton founded (EG&G stood for Edgerton, Germeshausen, and Grier).

He has won several awards since 1986, including an R&D 100 Award for the ultra-violet holographic lens diagnostic. His most recent honors were two Department of Energy Defense Program Awards of Excellence in 2014.

Award selections will be made this summer and announced in January 2017.

NSTec Awards Scholarships to 16 Students

Outstanding students in the 2016-2017 academic year received scholarships from National Security Technologies (NSTec).

Recently, NSTec awarded its Family Scholarships to 12 deserving applicants—children of NSTec employees—to help start or continue their college education dreams. This year's Family Scholarships totals $34,500 split among the winners. Since 2008, NSTec has invested $784,000 in scholarships for employees' children.

Earlier, NSTec awarded a total of $20,000 in Science and Engineering scholarships to four students—two in Livermore, Calif., and two in New Mexico—who are pursuing academic studies in these majors. The Science and Engineering scholarship program, an extension of the NSTec education investment philosophy, was launched in 2006 and has provided more than 221 scholarships and $1 million to high school seniors across the country planning an education in these fields.

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NNSS Aviation Professionals Win Top DOE Honors

By Jeff Donaldson and Lory Jones

The Nevada National Security Site (NNSS)'s Aviation Program has been recognized by the U.S. Department of Energy (DOE) as Aviation Program of the Year for 2016.

As well, Chief of Maintenance Dave Krausnick was awarded Aviation Professional of the Year. Krausnick was recognized for his operational skills and accomplishments, which contributed in the most outstanding manner to improving and sustaining the safety, efficiency and effectiveness of the NNSS Aviation Program, said Richard Fischer, RSL Aviation Section manager.

Kevin Borders

The Aviation team at the Remote Sensing Laboratory (RSL) at Joint Base Andrews in Maryland and Nellis AFB in Nevada also received DOE awards that included the Jeff Snow Aviation Program Memorial Award, Awards of Excellence (for years of accident-free flying for the DOE), and Performance Awards and STAR awards from National Security Technologies (NSTec). Besides individuals, the Jeff Snow Award also honored the National Nuclear Security Administration and its Nevada Field Office (NFO) Aviation program, managed and operated by NSTec and RSL's Aviation division.

At RSL-Andrews, the Aviation team and others (photo, above) receiving awards were (l-r): Gregory Shore (Jeff Snow award, Performance Award), Alex Brid (Jeff Snow), Richard Fischer (Jeff Snow), Grant Ebner (Performance Award), Tony Thompson (Jeff Snow, Performance Award), Tim Rourke (Award of Excellence for 15 years of accident free flying, Performance Award), Wade Fahnestock (Performance Award), NSTec Global Security Director Melissa Hunt (presented awards), Wendell Stadig (Jeff Snow, Performance Award), NSTec President Jim Holt (presented awards), Charles Lightfoot (Jeff Snow) and Donald Schuessler (Performance Award).

Michael Hornish

Piotr Wasiolek

Also receiving Awards of Excellence for years of accident-free flying were Kevin Borders (15 years), Michael Hornish (10 years) and Piotr Wasiolek (15 years).

At RSL-Nellis, the Aviation team and others (photo, below) received awards as well (l-r): Joe Cummings (Jeff Snow), Carolyn Logan (NSTec STAR award), NSTec Vice President for Program Integration Raffi Papazian (presented awards), Susan Roberts (Jeff Snow, Award of Excellence for 15 years of accident-free flying), Michael Toland (Jeff Snow), NFO Deputy Manager Carol Sohn (presented awards), David Carder (Jeff Snow), David Krausnick (Jeff Snow, Aviation Professional of the Year), Daniel Butler (Jeff Snow), Emanuele Avaro (Jeff Snow), Les Winfield (Jeff Snow), Edward Zachman (Jeff Snow), Robert Ziehm (Jeff Snow) and Sandra Hayes (Jeff Snow, STAR award).

The Aviation team was recognized for being the most outstanding, safest and most efficient and effective in all aspects of the flight program. It is responsible for helicopters and fixed-wing aircraft that conduct an array of special missions, ranging from aerial surveillance for radiological threats during major events around the world to aerial monitoring for consequence management to wildland firefighting operations at the NNSS. RSL's aviators also were called on to help in an advisory capacity during the 2011 tsunami and nuclear disaster in Japan.

Additionally, NSTec received from the International Business Aviation Council its IS-BAO (International Standard for Business Aircraft Operations) Stage III Certification for meeting the highest recognized industry standards for aviation and safety operations.

Photos: Steve Carragher, Ari Rosenberg

Recent NNSA Visit

Continued from page 1

"We're here to better understand your mission 10, 15, 25 years from now without allowing infrastructure to drive the boat or, even worse, to prevent the boat from getting to where it needs to go," said Jim McConnell, NNSA deputy associate administrator for Infrastructure and Operations.

Mercury is the first place where employees will see the changes take shape. Phase one calls for removing the foundations of old facilities that have already been torn down, as well as removing two old dormitories, the old recreation center, the vacant fire station and the tent structure located across from the cafeteria.

New construction will include consolidating administrative functions at Mercury into an area just across from the cafeteria, where the tent structure is today. The first new building will be in the 8,000- to 10,000-square-foot range and is expected to be constructed in fiscal year 2018, with three other buildings slated for construction the following three years. Those three buildings will be constructed in the same area as the first administrative building. Future phases are also in the planning stages.

Why not repurpose some of the older buildings on the campus instead of building something new? Retrofitting older facilities to make them energy and water-efficient and able to handle modern communications systems can cost more than a building or a new facility. "When you talk '80s' and '90s' facilities, you can consider repairing them. When you're talking infrastructure from the '50s, '60s and '70s, new construction can be cheaper," said Joel Leeman, Infrastructure Management and Modernization director.

This type of investment also paves the way for more sustainable facilities such as solar arrays. Plans are in the works for a solar demonstration project that could lead to a larger solar project in the future.

Aging infrastructure isn't limited to roads, pipes and buildings. The Site's communications systems, which include internet service, telephones and radio, are also in need of major investment and will be part of the modernization effort.

While the discussion centered on buildings, pipes, power lines and other infrastructure needs, the reason for the investment was top of mind to the participants. "It becomes evident why this is so important," said NFO Manager Steve Lawrence. "The investment in our infrastructure is an investment in our people."

NNSA Honors "Modernization" Enterprise Employees

By Lory Jones

During the July 12 "Deep Dive" review of the Site's infrastructure planning process in North Las Vegas, National Nuclear Security Administration (NNSA) Associate Administrator Jim McConnell presented awards to outstanding individuals within the Nevada Enterprise who are aiding the modernization process. Photo (below), left to right: Darwin "Kirby" Ward (NSTec), Shannon Parsons (NSTec) and Gerry Babero (NFO) for the Heating, Ventilation, and Air-Conditioning (HVAC) Asset Management Program (AMP),

and (below) NSTec's Dimitry Molodyko for his work on deferred maintenance within the Core Infrastructure, Risk-Informed Strategic Planning (CRISP). McConnell is on the right in each photo.

Photos: Lory Jones

The HVAC AMP will develop partnerships between the NNSA Enterprise and the national construction and HVAC communities. These partnerships will address modernization issues to meet mission requirements and to reduce deferred maintenance growth across the NNSA complex.

CRISP is a complex-wide initiative that empowers a multi-organization team to develop a data-driven, risk-informed strategic planning process that revolutionizes infrastructure investment decision-making.

NNSA Recognizes SPE-5 Team Members

By Kirsten Kellogg

Three Nevada National Security Site (NNSS) team members were recently presented National Nuclear Security Administration (NNSA) Certificates of Appreciation for their support of the Source Physics Experiment (SPE)-5 project. Global Security Director Melissa Hunt (far left) and SPE Program Manager Jesse Bonner (far right) delivered the certificates to (left to right) Robert Schuette of Operations & Infrastructure for his work as the construction coordinator, Ashley Isaacs of Global Security for her work as the project manager and field coordinator, and Robert White of Defense Experimentation & Stockpile Stewardship for his work as the diagnostics coordinator.

Photos: Gerald Troller

NNSS Research Draws National Attention

By Tracy Bower

Most of us look at an image and interpret what we see. A team of Nevada National Security Site (NNSS) scientists is making it an exact science, developing a way to look at images and to mathematically determine exactly what's there. That information is useful to scientists working on subcritical experiments at the NNSS, but its reach extends beyond the Site's boundaries to the fields of medicine and astronomy.

Scientists Aaron Luttman, Marylesa Howard and Dr. Stephen Mitchell co-authored a paper on their findings, along with intern Margaret Hock and Michael Fowler, a former intern who now works at MathWorks. The project was funded by National Security Technologies' Site-Directed Research and Development program.


Photo: Lory Jones

Posing in their office at the North Las Vegas Facility are (l-r): Margaret Hock, Marylesa Howard, Dr. Stephen Mitchell and Aaron Luttman.

The team developed a mathematical technique that allows scientists to interpret data from images with greater accuracy. "With X-rays, you're looking at information that's compressed into a two-dimensional image but you're trying to extract three-dimensional data from it. This process allows you to do that," said Dr. Mitchell. That's useful for scientists conducting experiments to ensure the safety of the nation's nuclear stockpile.

Other scientific disciplines, such as medical technology, may benefit from the discovery. Medical professionals may determine density profiles embedded in X-ray, MRI and CT scan images with greater accuracy. It can also benefit the field of astronomy. Telescopes can capture images of distant galaxies, but those images aren't always clear. "Any camera system you use has some blur to it—even if you don't see it," said Howard. "This process can help to remove that."

The findings can be widely used in a variety of disciplines. "We've laid out an approach in doing this type of image processing and the algorithmic details," said Luttman, who led the project. "If people want to start applying it, they simply write their own computer program because we've laid out the process."

The breakthrough discovery was highlighted in a paper that the team published in the SIAM Journal on Scientific Computing. That journal is one of 17 published by the Society of Industrial and Applied Mathematics (SIAM). SIAM selected the article by the team as the one article out of 17 journals to highlight in June 2016.

Luttman and the team were thrilled at the attention the article has garnered in the world of mathematics. "We didn't lobby to get this. We found out when everyone else did (that it was selected to be highlighted) so we were thrilled," Luttman said.

CTBTO: Why They Visited the NNSS

By Lory Jones and Jesse Bonner

You've probably driven past hundreds of them during the course of your workday. They are the collapsed craters, the cracks in the rock and dirt, the diagnostic cables baking in the sun, and the cultural artifacts—all from when nuclear explosions rocked the valleys, tunnels and mesas of the Nevada National Security Site (NNSS).

These remnants from nuclear explosive testing are now relevant as a classroom for teaching a new breed of scientist—the Comprehensive Nuclear Test-Ban-Treaty (CTBT) on-site inspection (OSI) surrogate inspector. When it enters into force, the CTBT will ban nuclear explosions. The Treaty makes it very difficult for countries to develop nuclear weapons for the first time, or for countries that already have them to make more powerful weapons.

OSI is a pillar of the CTBT Organization (CTBTO) Preparatory Commission, based in Vienna, Austria. Imagine that analysis of data from the network of worldwide sensors comprising the International Monitoring System has pinpointed a suspicious event in an area. A team of 40 international on-site inspectors can be dispatched to the area to collect evidence at the suspected site. Obviously, a great place to train OSI teams would be where nuclear explosions have occurred.

From May 16 to May 20, 50 surrogate inspectors and CTBTO staff members from 32 different countries gathered at the National Atomic Testing Museum in Las Vegas, Nev., and then travelled to the NNSS to participate in an event called the Nevada Familiarization Activity. Remnants from underground nuclear explosive testing decades ago at the Site were relevant to these surrogate inspectors, who represent the CTBTO Preparatory Commission.

At the NNSS, a team of experts from National Security Technologies, National Nuclear Security Administration (NNSA) laboratories, the Departments of Defense and State, and NNSA headquarters facilitated the activity. The surrogate inspectors were shown the drilling equipment used for constructing vertical emplacement holes. They were allowed to compare the scale of a large emplacement such as Icecap versus the smaller footprint of a non-nuclear Source Physics Experiment. The surrogate inspectors were shown different types of collapse craters in Yucca Flat and on Pahute Mesa, as well as test locations where there was no surface collapse. There was also a focus on underground operations, such as P-Tunnel, and how to spot differences between civil tunneling operations, commercial mining operations and possible underground scientific operations. Finally, an OSI mapping exercise on Pahute Mesa provided the participants with an opportunity to use all the knowledge they had gained during their three days of intense training at the NNSS. Afterwards, the participants returned to the Museum for final briefings and a course evaluation.

Feedback on the experience was very positive, with one participant saying the experience was a "revelation." Said Program Manager Tim Evans of NNSA's Office of Defense Nuclear Nonproliferation, "The success of the Nevada Familiarization Activity was only possible due to the commitment and cooperation of the team of NNSA and interagency experts. This was a tremendous opportunity for the surrogate inspectors, and is another sign of U.S. commitment to strengthening all aspects of the CTBT monitoring and verification regime."

There is talk of possibly having additional training courses in the future, and the NNSS will be ready and waiting to provide a unique outdoor classroom experience for the next round of future CTBT on-site inspectors.

For more information, visit the nnsa.energy.gov and ctbto.org websites.


Photo: Ari Rosenberg

OSI surrogate inspectors hike up a hill near the Climax Mine in Area 15. The surrogate inspectors are looking for evidence as to whether the site is an underground nuclear explosive test facility or a mining operation.

NNSS' "Sandstorms" a Game Changer for Research

By Nikki Soto

The Nevada National Security Site (NNSS)'s unmanned aerial system (UAS) program launches the Site into a new era of research and development. What began as a vision became reality after two Sandstorm vehicles were purchased from Unmanned Systems Inc., a company based in Henderson, Nev.

The UAS program's primary purpose is to expand the development of sensor technology which will enable scientists to increase the systems' capabilities. The program quickly gained traction. Those involved began to see the enormous possibilities the UAS research would uncover.

A Sandstorm unmanned aerial vehicle was displayed last spring at the Association for Unmanned Vehicle Systems International (AUVSI) 2016 Conference. Posing under it are (l-r) NNSS' Rick Fisher, Karen McCall, JD Daniels and Pam Rangel.

"The history goes back two years ago when we started a new whole realm of research within the Site-Directed Research and Development Program," said Program Manager Howard Bender. "These are experimental platforms that really get you where you need to be. We see this as complementary to our manned aircraft and fulfilling a niche role in unknown or extremely hazardous situations as risk mitigation to our manned systems."

"We are investigating how we would use them and in which situation they would be most useful," added Karen McCall, UAS program manager. "During the midst of an emergency, we are in reaction mode. We will need to know the answers far in advance to properly integrate unmanned platforms."

The UAS program is also capable of much more than what was initially anticipated.

"The data we get out from the sensors are critical for decision making in either emergency response or consequence management situations," said Bender. "There's a whole different application of spaces that we're getting involved with. Basically, it is helping push the technology," he added.

The Sandstorms were chosen because of their abilities to integrate a large number of sensors and carry a "sizeable payload" up to 20 lbs. They have a 15-foot wingspan and can soar through the sky at from 40-110 mph at altitudes from 50 to 6,000 feet. They can also remain in the air for extended flying periods.


Photos: Dave Krausnick
Distinguished Scientist Howard Bender poses with an unmanned aerial vehicle.

"Larger platforms or so-called alternately piloted vehicles that can have a pilot may also be in our future," said Bender, who has high hopes for this program and believes it is here to stay. "The future is very much on our minds. It really is dependent on how successful we are in demonstrating the capability of the technology."

The program will soon be collaborating and establishing a Cooperative Research and Development Agreement (CRADA) with a company that supports 3D radiation mapping. The CRADA will allow the NNSS to fly one of these imagers on the Sandstorms as a new tool to identify and examine radiological hazards in an area. Training is currently underway for two NNSS pilots to learn how to operate the sandstorms.

The UAS program will be holding a demonstration of the Sandstorms and the capabilities of the sensors in September.

NATM "Family Days" Took Visitors Back in Time

By Lory Jones

Nevada Enterprise (NvE) employees and their families enjoyed free guided tours from May through July during Family Days at the National Atomic Testing Museum (NATM) in Las Vegas. They viewed historical exhibits depicting the work and missions of the Nevada National Security Site and our employees, as well as current activities.

"We very much enjoyed the free tour and the opportunity to share the history with my family," said Ted Redding, manager of Ecological & Environmental Monitoring. "I had attended workshops there, but had never toured the museum. I've been working at the Site for 25 years, so it was nice to see pictures of some of the people I worked with in the past. It was also nice to share with the family some of the important work we do."

Added Principal Technologist Tyrel Otteson, whose trip to the NATM was his first, "I really enjoyed it! The kids had a lot of fun."


Photo: Lory Jones
Visiting the museum's atomic history exhibit.

For Bernadine "Bernie" Bailey's son, Jesse, the NATM experience was special. Jesse is seven years old "and absolutely loves going to the NATM. We have gone three times, once as volunteers for the Nevada Science Bowl. Most kids are interested in the explosions but for him, it goes deeper. He is fascinated by the history, the science, and how things have changed over time. He also loves that the activities that took place many years ago are a part of the work his mom does now. He says he can't wait until he is old enough to work at the NNSS! I told him to just enjoy being a kid for now," said Bailey, a training coordinator in Requirements Management.

The National Security Technologies Employees Association sponsored Family Days.

Livermore Students Get Closer Look at NNSS, Stockpile Stewardship Mission

By Jeff Donaldson

The Nevada National Security Site (NNSS) works hard to promote science and technology among college students who could be future employees in nuclear physics work. That is why Livermore Operations (LO) in California brought onboard six college students to participate in a summer hire program. These undergraduate students, studying science, engineering and communications, work each day with some of the brightest scientists and engineers who expose them to everything from plasma physics and laser technology to communications—all disciplines that support dynamic experiments in stockpile stewardship.

LO supports projects at all the national labs, but primarily the Lawrence Livermore National Laboratory (LLNL) and the Nevada National Security Site (NNSS). Ensuring these students have the tools they need to pursue these challenging careers is not only the focus of the summer hire program, they also participated in a LLNL summer school that highlights the importance of the nation's stockpile stewardship mission.

Recently, the six Livermore Operations students were invited to join a dozen other students to hear a top NNSS scientist speak at the Livermore Summer School on Plasma Physics for Historically Black Colleges and Universities seminar. The seminar, part of the two-week summer school program, focuses on aspects of the National Nuclear Security Administration (NNSA)'s weapons complex and the opportunities that exist

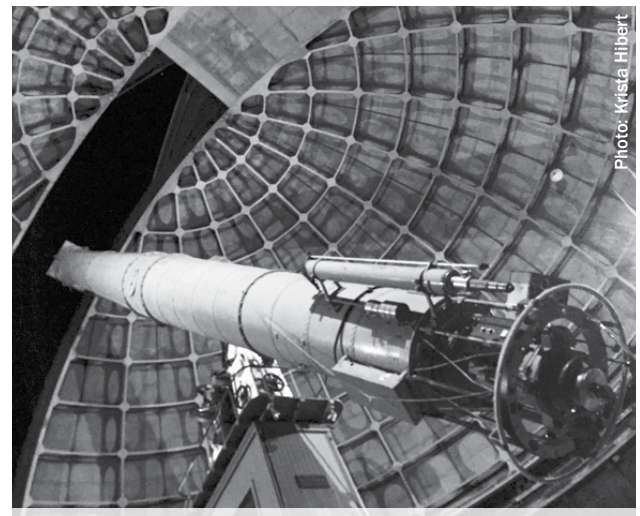


Photo: Krista Hibert

Lick Observatory

there. NNSS Distinguished Scientist Dr. Rick Freeman was one of the keynote speakers. The program is primarily designed to introduce minority and financially disadvantaged students to fields in science and technology.

"I saw this as a unique opportunity to talk to kids who haven't had the exposure to the possibility of working in the NNSA weapons complex, the National Labs or the NNSS for that matter," Freeman said. "It was very much a discussion about the kind of exciting and interesting science that's out there in service to our nation."

"This is quite a prestigious event. The lab puts a lot of effort into promoting it, so we jumped at the opportunity to get involved," added LO Senior Principal Scientist Franz Weber who helped coordinate Freeman's participation. "We advance national security by scientific research and technology improvement. This was an excellent opportunity to reel in the next generation of scientists and engineers."

The two-week Plasma Physics summer school exposed the students to the spectroscopy of high-temperature plasmas found in astrophysical objects, magnetic fusion plasmas, and laser- produced plasmas, and covers topics such as atomic physics, data analysis, experimental techniques and facilities for spectroscopic studies. Daily seminars by scientists like Freeman who are active in high-temperature plasma research provide insight into cutting-edge experimental and computational aspects of this research.

Students who attended the seminar were able to tour the University of California's famed Lick Observatory near San Jose, Calif. All of these efforts help boost talent that could one day prove essential to the important work in stockpile stewardship NSTec and the NNSS does, said LO Manager Chris Silbernagel.

"Our summer hires are exposed to a number of opportunities during their tenure. Some of these students return as casual employees. Some return as full-time employees. It is a great way for us to invest in future employees," Silbernagel said.

NSTec Chooses Company to Build New Waste Disposal Cell

By Lory Jones

In June, National Security Technologies awarded CTI and Associates, Inc., a contract to design and construct the new mixed low-level waste (MLLW) disposal cell within the Area 5 Radioactive Waste Management Complex adjacent to the existing mixed waste disposal unit at the Nevada National Security Site (NNSS).

The design of the new cell began immediately.

The NNSS currently has a fully compliant permitted disposal cell to dispose of onsite- and offsite-generated MLLW that was put into service January 2011. As of June 30, 2016, the existing permitted cell was approximately 80 percent full. Disposal of waste frequently falls on the critical path of cleanup projects. In many instances, waste disposition (processing, treatment, and disposal) is part of cleanup agreements with the stakeholders and requires the oversight of regulators. Based on current generation rates, the existing MLLW disposal cell will be 100 percent full by mid-calendar year 2018.

It is anticipated that the construction specifications

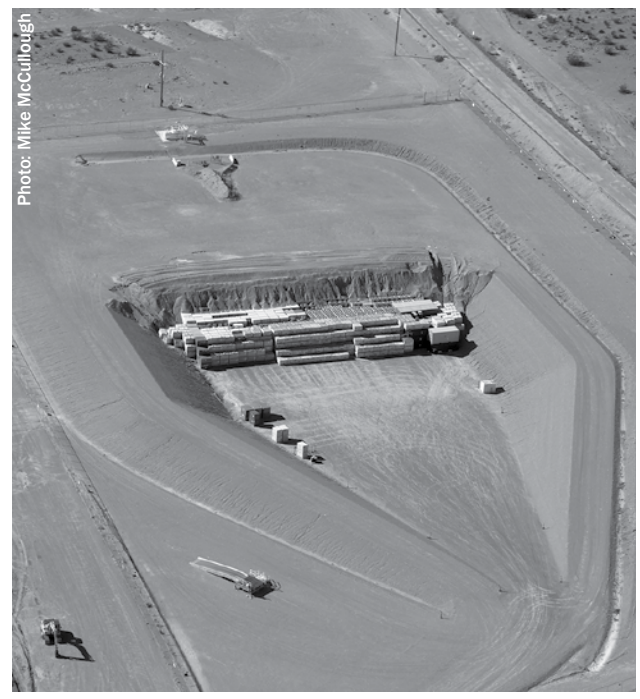


Photo: Mike McCullough

and drawings will be complete in early December. Once the design is complete, the NNSS will request a modification to their existing Resource Conservation and Recovery Act Part B permit for the new disposal cell. The permit modification request process requires public review and comment on the details of the cell's construction.

Construction of the new mixed waste disposal unit is dependent upon the State of Nevada Division of Environmental Protection granting a permit to construct and operate a new fully compliant permitted MLLW disposal facility at the NNSS. It is anticipated that this process will take approximately 180 days. Once the new permit is issued, construction will begin; it is scheduled to be completed in January 2018, with startup of operations in February 2018. Based on estimated generation rates, the new mixed waste disposal unit should have enough capacity to accept MLLW through at least 2026.

Military Interns Get Hands-On Experience With NNSS Mission Capabilities

By Lory Jones

Six interns from the U.S. military interned with the Nevada National Security Site (NNSS) this summer to learn civilian skills that they can apply in their military careers. Each year, National Security Technologies (NSTec) hosts cadets and midshipmen from the Air Force Academy, Annapolis (Navy) and West Point (Army), in a variety of missions at the NNSS.

The National Nuclear Security Administration (NNSA)'s NA-10 group has been funding these internships for the past five years. At each of NNSA's eight sites, leading-edge research and development is carried out on key national security technologies critical to the United States and its allies. Programs include science, technology and engineering essential to sustaining the nation's arsenal of nuclear weapons, plus a wide array of work on other efforts for the Departments of Defense and Homeland Security, among others. This includes support to the intelligence community.

RSL-Nellis Principal Technologist Christopher Cacace (right) explains some RSL equipment to West Point cadets Tyler Brians and Angel Reyes (l-r).

Midshipmen Ryan Mansfield (photo, rear) and Josh Ten Eyck from the U.S. Naval Academy in Annapolis, Md., interned with the Dense Plasma Focus (DPF) team at the North Las Vegas Facility.

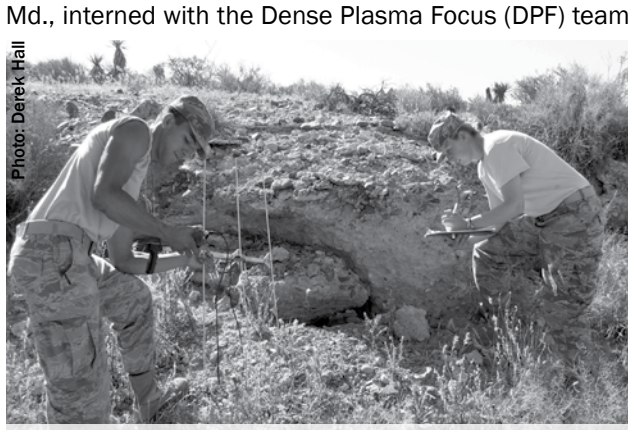
The NNSS offers everything from environmental management to dynamic experimentation. NSTec hosts cadets across the Site and at the Remote Sensing Laboratory (RSL) working Aerial Radiological Survey Systems' research and development.

From May to June, Midshipmen Josh Ten Eyck and Ryan Mansfield from the U.S. Naval Academy in Annapolis, Md., interned with the Dense Plasma Focus (DPF) team at the North Las Vegas Facility. Their purpose was to develop a potential next-generation, pulsed neutron-based diagnostic for future experiments. Following that was their introduction to shock physics and shockwave research at the North Las Vegas Facility. This brand new facility is serving as a practicum, or study course, for experimentalists, diagnosticians and modelers early in their careers to design and execute experiments before working on more complex activities at various platforms at the NNSS.

From June through early July, Air Force Academy Cadets Kristen Chapman and Dan Lara worked with Ted Redding of the Ecological and Environmental Monitoring department to support the NNSS' wildlife protection program. They tracked desert tortoise movements using VHF antennae/receivers in a research study on movements of tortoises near roads. Chapman and Lara also tracked translocated juvenile desert tortoises, and recorded vegetation data to study changes of vegetation communities due to climate change. Lastly, they downloaded data from motion activated cameras used to track mountain lions on the NNSS.

"We have appreciated the great work these cadets performed for us. They were eager to learn what we do here and are very inquisitive about the wildlife and plants at the NNSS. Hopefully we have provided a glimpse of this type of work that may help them in their future endeavors," said Kent Ostler, principal scientist at the NNSS.

Army cadets Tyler Brians and Angel Reyes from the U.S. Military Academy at West Point, N.Y., spent three weeks at RSL at Nellis AFB, becoming familiar with the NNSA's Radiological Emergency Response assets and performing several tasks. These included hands-on radiation detector characterization, and radiation data analysis using software developed at RSL, as well as an in-depth study of literature on uranium geology, nuclear nonproliferation, and nuclear test ban treaties.



At the NNSS, Air Force cadets Kristen Chapman and Dan Lara take data at a tortoise habitat.

Cardenas Surprised by STEM Advocate of the Year Award

By Lory Jones

Michael Cardenas, manager of the Calibration & Applied Analysis division at Livermore Operations (LO) in California, has been a leader of STEM (Science, Technology, Engineering, and Math) outreach for LO and in the local academic community in the San Joaquin Valley for several years. This spring, Cardenas and Manager Chris Silbernagel were attending a STEM awards dinner honoring STEM Teacher and STEM Student of the Year when Cardenas' name was called: as STEM Advocate of the Year.

"I had no idea I was going to receive such an award," Cardenas said. "It seemed that everyone at the banquet knew ahead of time that I was going to receive the award, including my own wife who joined me that evening. When you put work into an endeavor you are so passionate about, obtaining an award for such an effort doesn't cross your mind. For me, I simply dedicate a large portion of my free time to the community because I enjoy it and it helps feed my soul and the idea of paying it forward."

The North Central Valley STEM Center in Ripon, Calif., which hosted the dinner, is a Regional Collaborative Partnership between area leaders in education, industry and businesses from throughout the Northern Central Valley and beyond. It serves K-12 students in San Joaquin and surrounding counties. Its mission: to help California prepare the nation's most STEM-capable graduates.

Cardenas also received a congressional award from California Congressman Jerry McNerney for his STEM outreach activities—"another surprise," he said.

Michael Cardenas (left) receives his award. The emcee is Bret States from the San Joaquin County Office of Education's Office of STEM.

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NEVADA NATIONAL NNSS SECURITY SITE

Groundwater Open House Gives Locals New Understanding of NNSS

By Kaylyssa Hughes

Nevada National Security Site (NNSS) scientists and staffers received a warm welcome from the Amargosa Valley community July 26 for the 7th annual Groundwater Open House.

Attendees from throughout Southern Nevada arrived ready with questions for the NNSS groundwater experts, who presented displays on topics ranging from the historical background of the NNSS to the evaluation of sampling technology. Along with NNSS staff, representatives were present from the State of Nevada Division of Environmental Protection and Division of Water Resources, Nye County, the Nevada Site Specific Advisory Board (NSSAB) and the Community Environmental Monitoring Program. The NNSS also partnered with the local community to cater the event, with homemade refreshments provided by the Amargosa Senior Project Council.

Amargosa Valley resident George Tucker discusses a Frenchman Flat display with groundwater expert Jenny Chapman (foreground).

George Tucker, a chemical engineer from Amargosa Valley, came to the open house with concerns about the safety of NNSS groundwater. After viewing all of the displays and speaking with several NNSS groundwater experts, Tucker says his mind was changed. “Any fears that I might have had have vanished,” he said. Tucker also appreciated the proactive effort by the NNSS to reach out to surrounding communities. “It is gratifying in this day and age to see a government agency making the effort to keep residents informed,” he said.

Keeping the public informed is a top priority of the NNSS. “The Groundwater Open House is a great way to connect with communities. It’s an opportunity for us to meet with local residents, answer their questions and receive their feedback,” said Kelly Snyder, NNSS Public Affairs specialist.

Displays at the open house took various forms, from videos on groundwater at the NNSS, to animated computer models of the site, to posters on the latest sampling results. With the help of the groundwater experts, local residents studied maps of groundwater flow patterns and learned how groundwater velocity and radioactive decay impact contaminant movement. Also featured was an interactive groundwater demonstration using an “ant farm” model of geologic layers.


NNSS groundwater expert Ken Ortego (left) shows a Groundwater Open House attendee core samples from drilling at the NNSS.

Highlighted was the success story at Frenchman Flat, a groundwater characterization area that was approved by the State of Nevada to enter into long-term monitoring, the final stage of the NNSS groundwater characterization strategy. This significant achievement was outlined in several displays at the open house. Other key themes were the science of groundwater investigation and how public water supplies are kept safe from the effects of historic underground nuclear testing.

All posters and videos displayed at the open house can be viewed at: nv.energy.gov/emprograms/gwopenhouse.aspx.

Photos: Christy Morris

Nevada Site Specific Advisory Board members (l-r): Pennie Edmond, Donna Hruska (NSSAB chair), Janice Keiserman and Don Neill in front of the NSSAB display at the Groundwater Open House.

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